720 ton storage silos, until it is fed to the boilers (Delmarva Power, Phase II CPCN application, 1993, pg 3.3.1-1).

The coal handling system will also include measures to minimize fugitive dust emissions during the coal handling operations, as described in greater detail in Section 2.2.10.3 of this report (Delmarva Power, Phase II CPCN application, 1993, pg 3.3.1-1).

2.2.3 *Fuel Oil Storage*

The proposed Dorchester facility includes a 300,000 gallon fuel oil storage tank located on the western side of the power block, to provide fuel to the PC boiler for startup purposes, and to the auxiliary boiler (Delmarva Power, Phase II CPCN application, 1993, Section 9.1.3, pg 2-3). The fuel oil storage tank, will be a cylindrical structure, approximately 50 feet in diameter and 20 feet high. It will have a high level alarm and secondary containment, and be constructed over an impermeable base (Delmarva Power, Phase II CPCN application, 1993, pg 3.3.2-1, Figure 3.8.3-4). Storage tanks are typically constructed on impervious fill and surrounded by a secondary containment structure capable of holding the entire contents of the tank and at least 1 foot of freeboard.

The fuel oil storage area will be subject to MDE's oil pollution and tank management regulations (COMAR 26.10.01), which include specifications for tank design and construction, procedures for tank management, and development of a Spill Prevention, Control and Countermeasures (SPCC) Plan. An SPCC plan, as defined in 40 CFR 112, must demonstrate that the operator of an oil storage facility is able to protect environmentally sensitive areas from contamination, respond to the threat of a pollutant discharge, and contain, cleanup, and mitigate a spill within the shortest feasible time. Delmarva Power will have to provide detailed secondary containment measures as well as other general protective measures for spill prevention prior to construction.

Since the proposed Dorchester facility will have a fuel oil storage capacity of greater than 10,000 gallons, COMAR 26.10.01 also requires an oil operations permit from MDE-WAS. In addition, COMAR 26.10.01.06 requires Delmarva Power to obtain an oil transfer license.

2.2.4 *Water and Wastewater Treatment*

2.2.4.1 *Water Supply*

The total inflow of water to the proposed facility will be approximately 5,352,900 gallons per day (gpd) (8.28 cubic feet per second (cfs)), and will be supplied by four sources: ground water, surface water, municipal water (potable water), and potentially contaminated runoff and leachate (Delmarva Power, Phase II CPCN application, 1993, Figure 3.5.1-1). On average, approximately 7.0 percent of the total inflow to the facility will be supplied from well water, 91.5 percent from surface water, 0.07 percent from potable water, and 1.4 percent from runoff and leachate. Each of these sources has different pre-use treatments. Specific descriptions of each source are provided below.

- Ground water will be pumped from two on-site production wells at an annual average rate of 374,400 gpd (0.579 cfs). Ground water will be used for makeup to the boiler, and as the primary supply to the SDA, the SO_2 control system. Ground water treatment consists of lime softening for pH adjustment, sedimentation, filtration, and demineralization to remove impurities before entering the boiler. Makeup flows to the boiler will average 132,000 gpd (0.204 cfs); water entering the boiler will be treated with sodium phosphate (Na_3PO_4) to keep the hardness ions in solution (Na_3PO_4 is used to help prevent calcium carbonate ($CaCO_3$) and magnesium carbonate ($MgCO_3$) from precipitating out on the boiler tubes or other water conduits), a neutralizing amine to control pH, and an oxygen scavenger to minimize corrosion of the boiler's tubes (Delmarva Power, CPCN Phase II application, 1993, Figure 3.5.1-1).

- Surface water will be pumped from the Nanticoke River at an annual average rate of 4,896,000 gpd (7.58 cfs) to provide makeup water for the cooling tower. The average figure given here for water consumption is conservatively high. This rate is based on a three-cycle concentration within the cooling tower; cooling tower operation will vary between three and six cycles of concentration, depending on the Nanticoke River water quality. Nanticoke River water would not require treatment prior to entering the cooling tower (Delmarva Power, Phase II CPCN application, 1993, Figure 3.5.1-1).

- Municipal water (potable water) will come from the Town of Vienna's existing water supply. Delmarva Power will construct a new underground line to supply potable water to the facility (Delmarva Power, Phase II CPCN application, 1993, pg 3.5.3-1). On average, 3,700 gpd (0.006 cfs) of potable water will be used for human consumption and sanitary purposes. The Town of Vienna's water supply consists of two wells that supply Vienna's residential, commercial, and industrial uses. The town's water treatment plant has a net capacity of 150,000 gpd; the current average demand for potable water is only 55,000 gpd. The water treatment plant has sufficient capacity to meet Vienna's projected growth and the projected needs for the Dorchester facility (Howard, 1994, personal communication).

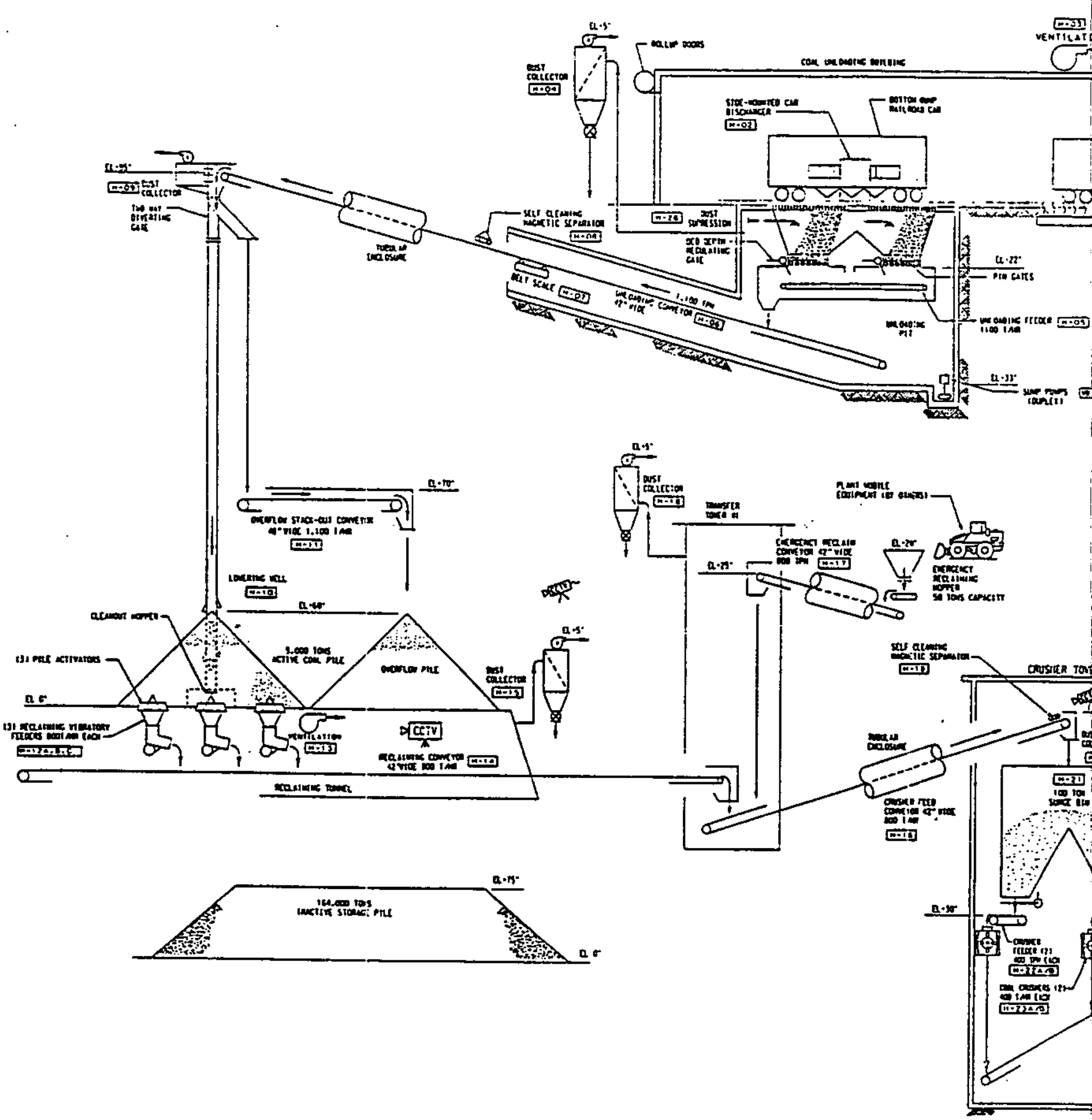
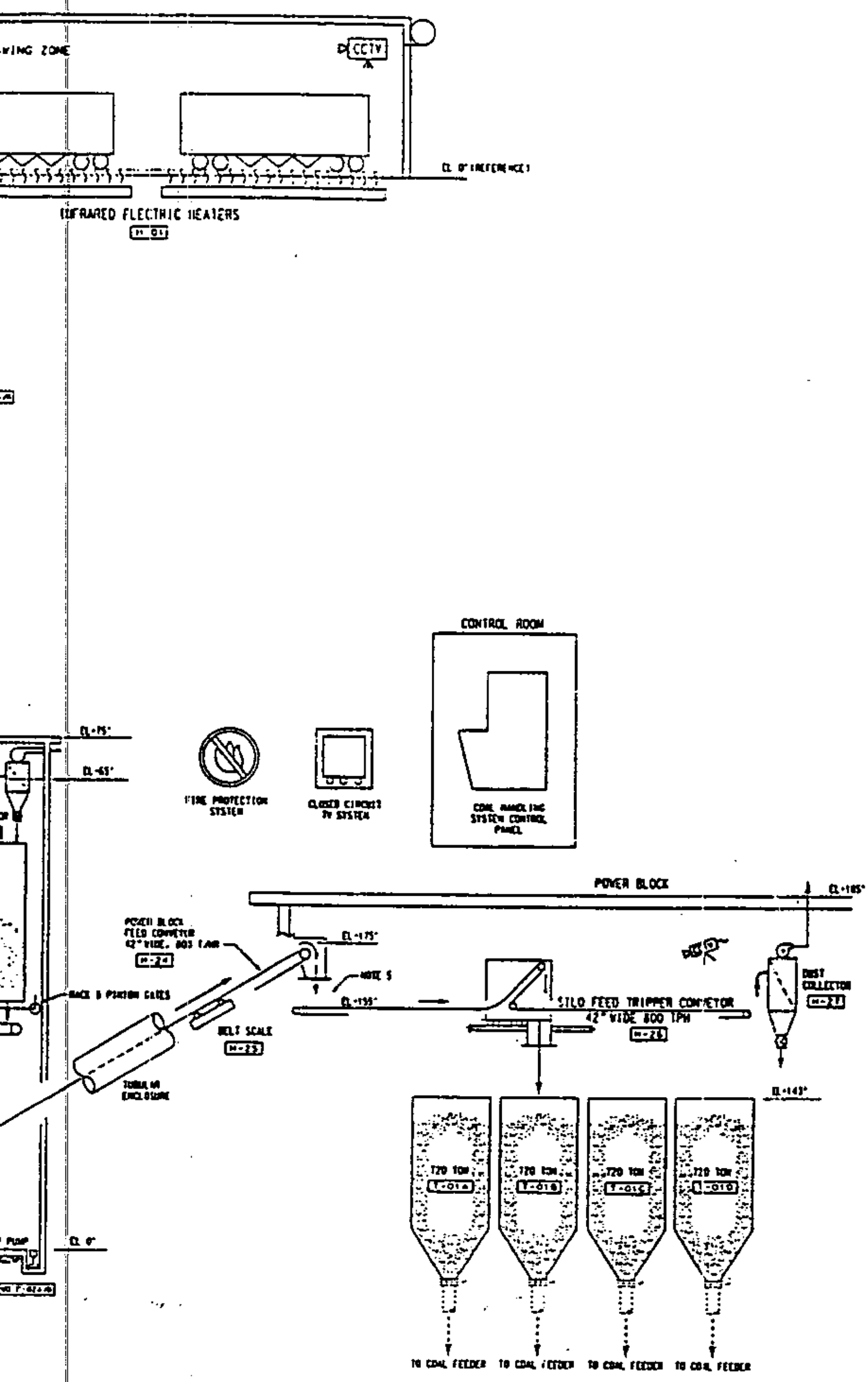

COAL UNLOADING BUILDING
ROLLUP DOORS
DUST COLLECTOR
DUST SUPPRESSION
BELT SCALE
TUBULAR ENCLOSURE
PIN GATES
LOWERING WELL
CLEANOUT HOPPER
5,000 TONS ACTIVE COAL PILE
OVERFLOW PILE
VENTILATION
CCTV
RECLAIMING TUNNEL
164,000 TONS INACTIVE STORAGE PILE

Figure 2-3
Coal Handling System
System Flow Diagram
Dorchester Site



Source: Delmarva Power, Phase II CPCN Application, 1993 (Figure 3.3.1-1).

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- Runoff and leachate from the combustion by-products disposal areas, and coal handling and storage areas, will be collected and stored in retention basins. Flows collected in the retention basins will depend on precipitation, but are estimated to average approximately 78,500 gpd (0.121 cfs). This water will be chemically treated to prevent scale formation, control pH, and minimize biofouling, then reused for cooling tower makeup (Delmarva Power, Phase II CPCN application, 1993, Figure 3.5.1-1 and Section 3.6).

2.2.4.2 *Wastewater*

Dorchester Unit 1 will generate two types of wastewater: sanitary waste, and plant process waste. Sanitary wastes (average rate of 3,700 gpd (0.0057 cfs)) will be discharged to the Town of Vienna's Wastewater Treatment Plant (Delmarva Power, Phase II CPCN application, 1993, Section 3.6).

Plant process wastes include cooling tower blowdown and wastewater from the plant's industrial processes. Cooling tower blowdown will be the largest wastewater flow; approximately 2 million gallons per day will be discharged to the Nanticoke River. Cooling tower blowdown will not require any treatment prior to discharge.

On average, the plant's industrial processes will generate 112,000 gpd of other wastewater. All of this wastewater will be recycled. Wastewater from the five industrial sources described below will be collected in the 700,000 gallon flow equalization basin and then sent through a wastewater clarifier, sedimentation basin, filter, holding tank, neutralization tank, and finally to either the cooling tower or the SDA. Chemicals added during the treatment process will include lime to facilitate coagulation, filter aids to increase solids removal, and acid or alkali for pH adjustment (Delmarva Power, Phase II CPCN application, 1993, Figure 3.5.1-1, and Section 3.6).

The industrial wastewater can be segregated into five different source types: filter backwash, boiler blowdown, filtrate, effluent from the neutralization tank, and effluent from the oil/water separator. These processes are summarized below along with estimates of the average flow associated with each process.

- Filter backwash, from the three pretreatment filters, will generate an average of 23,000 gpd (0.036 cfs) of wastewater. This is an intermittent waste stream that occurs only during filter cleaning (Delmarva Power, Phase II CPCN application, 1993, Figure 3.5.1-1 and Section 3.6).
- Boiler blowdown will produce a relatively continuous 68,000 gpd (0.105 cfs) stream of wastewater (Delmarva Power, Phase II CPCN

application, 1993, Figure 3.5.1-1). This flow represents 46 percent of the total industrial wastewater being generated for treatment. Boiler blown down refers to the discharge of small streams of steam or water from a boiler. This water is discharged to prevent scale buildup (commonly calcium and magnesium-based salts) inside the boiler tubes (the water that is converted to steam and drives the turbines), turbine blades, or condenser surfaces. Scale buildup on the boiler and condenser can inhibit heat transfer in these components, resulting in an overall decrease in efficiency of the boiler and condenser. Scale buildup on the turbine blades can cause to blades to be unbalanced, and may also result in pitting. This ultimately results in deterioration of the blade surface, and decreased turbine efficiency.

- Filtrate from dewatering the wastewater clarifier sludge will provide a constant wastewater stream, averaging 2,000 gpd (0.003 cfs) (Delmarva Power, Phase II CPCN application, 1993, Figure 3.5.1-1, and Section 3.6). The dried sludge will be disposed offsite.
- Effluent from the neutralization tank collecting the demineralizer waste will be generated constantly, at an average rate of 15,000 gpd (0.023 cfs) (Delmarva Power, Phase II CPCN application, 1993, Figure 3.5.1-1 and Section 3.6).
- Effluent from the oil/water separator will be generated intermittently at an average rate of 4,000 gpd (0.006 cfs). Water from the oil/water separator will be collected at various sumps and drains throughout the site (e.g., turbine sump, and transformer and fuel oil area drains). Waste oil and sludge collected in the oil/water separator will be disposed off site by a licensed contractor (Delmarva Power, Phase II CPCN application, 1993, Figure 3.5.1-1, and Section 3.6).

2.2.4.3 *Water Balance*

Table 2-2 summarizes the water balance for Dorchester Unit 1. This water balance is based on the information originally provided by Delmarva Power in the 1993 Phase II CPCN application, for a three-cycle concentration in the cooling tower. As presented in Table 2-2, the CPCN includes a condition that reduces the daily surface water intake requested by Delmarva Power by 1,082,000 gpd (from 5,978,000 gpd to 4,896,000 gpd). Delmarva Power has not updated the water balance to reflect the new intake conditions. The areas accounting for the majority of water loss in the system are the cooling tower evaporation and drift (approximately 67 percent of the water withdrawn from the river), and the cooling tower blowdown to the Nanticoke River (approximately 34 percent of the water withdrawn from the Nanticoke River). These two areas of water loss are also the most likely areas to accommodate a change in surface water withdrawal. The amount of change should be greater for cooling tower evaporation and drift (67 percent of the decrease) than for the cooling tower blowdown (34 percent of the decrease).

Table 2-2 Water Balance for Dorchester Unit 1

Water Intake (gpd)		Water Loss (gpd)*	
Delmarva Power Estimate of Withdrawal from Nanticoke River	5,978,000	Cooling Tower Evaporation and Drift	4,035,000
Well Water	374,400	Cooling Tower Blowdown—Discharge to River	2,018,000
Runoff/Leachate	78,500	SDA Evaporation	301,000
Misc. Drains	4,000	Soot Blowing	44,000
Total Intake	6,434,900	Boiler Blowdown Vent	20,000
		Bottom Ash System Evaporation	7,000
CPCN Condition specifying Withdrawal from Nanticoke River	4,896,000	Dust Suppression	7,000
Total Intake Amount Based on CPCN Condition	5,352,900	Leaks, Drains, Wash downs, etc.	1,500
		Landfill	1,000
		Total Loss	6,434,500

*The water balance indicating the water losses for Dorchester Unit 1 were originally provided in Figure 3.5.1-1 (based on a three-cycle concentration in the cooling tower) of Delmarva Power's 1993 Phase II CPCN application. As a result of subsequent negotiations, the final CPCN conditions specify a daily water intake 1,082,000 gpd less than that requested by Delmarva Power. Delmarva Power has not updated the water balance to reflect the new water intake conditions.

2.2.5 *Stormwater Management*

Delmarva Power developed a stormwater management plan for the proposed Dorchester Unit 1 facility. The plan satisfies Maryland's Stormwater Management Regulations codified in COMAR 26.09.02, as well as Dorchester County's Chapter 134 stormwater management requirements. According to COMAR 26.09.02, the goal of the stormwater management plan is to maintain or improve post-development stormwater quality and quantity, as compared to pre-development (current) conditions. In Dorchester County, the post-development peak discharge rates and total runoff volume for a 2-year, 24-hour storm event must not exceed the pre-development values.

The changes in hydraulic and hydrologic character of a site due to development can be characterized by comparing pre and post-development runoff curve numbers (CN). CN values indicate the amount of runoff expected from an area based on the soil group, ground cover, and other hydraulic factors and are used in stormwater calculations for predicting peak discharge and total runoff volumes. They range from 40 to 98. A high CN value (such as 98) indicates an impervious surface such as concrete or a building's roof. A low CN value indicates the area is permeable and has relatively little runoff. The following sections provide weighted CN values for the pre and post-development land areas, as an indication of the degree to which the proposed activity would alter the hydraulic characteristics of the land.

2.2.5.1 *Pre-Development Site Conditions*

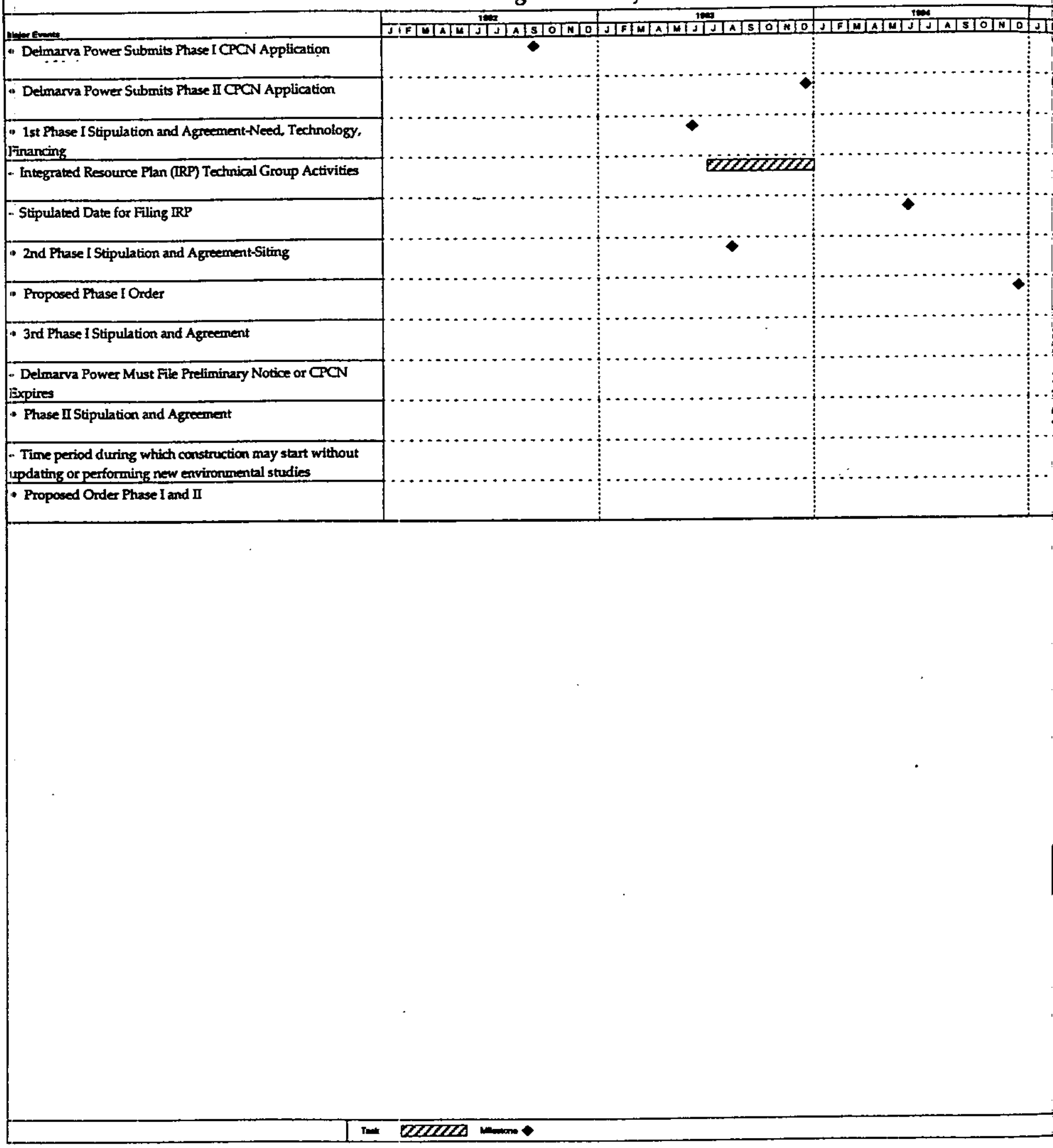
Farmlands, emergent wetlands, forested wetlands, and wooded areas comprise pre-development conditions. Currently, man-made drainage ditches are the predominant method for managing runoff on the site. Small ditches, approximately 2 to 3 feet wide and 1 to 2 feet deep, cut across the farm fields and feed the larger ditches, which transport the runoff to wetlands or other receiving water bodies.

The Chicamacomico River flows along the west side of the site and receives stormwater from 98 percent of the site's land area. The remaining 2 percent of the site land area is within the Nanticoke River Basin, which flows to the east of the site. The railroad/transmission line corridor, which extends to the northeast of the power block, will also contribute some runoff to the Nanticoke River Basin. The pre-development weighted CN for the plant site is 79.0 (Delmarva Power, Phase II CPCN application, 1993, Table 3.8.2-1).

The pre-development drainage boundaries for the plant site, shown in Figure 2-4, are generally along local crests between drainage ditches. Most of the discharge points are defined areas resulting from ditches, culverts, or natural low points acting as minor tributaries to the Chicamacomico River. A few discharge points, such as Discharge Points 8, 9, and 10 are not so clearly defined. Discharge Points 8 and 9 are in forested wetland areas that produce a dispersed overland flow area rather than a well-defined discharge point.

The drainage area for Discharge Point 10 was based on historic flow patterns and ditch grading, both of which have changed over time. The area that will become the power block currently drains through Discharge

Figure 1-3 Major Milestones Associated With The Delm



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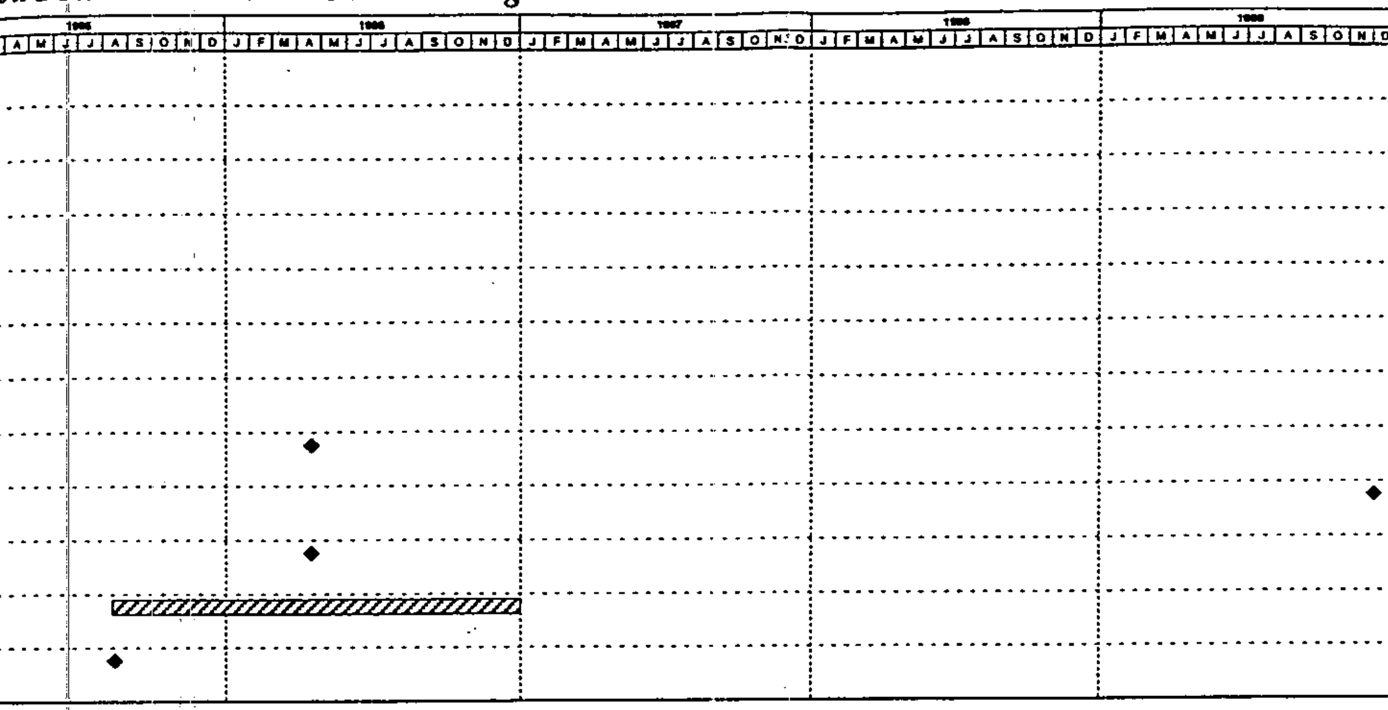
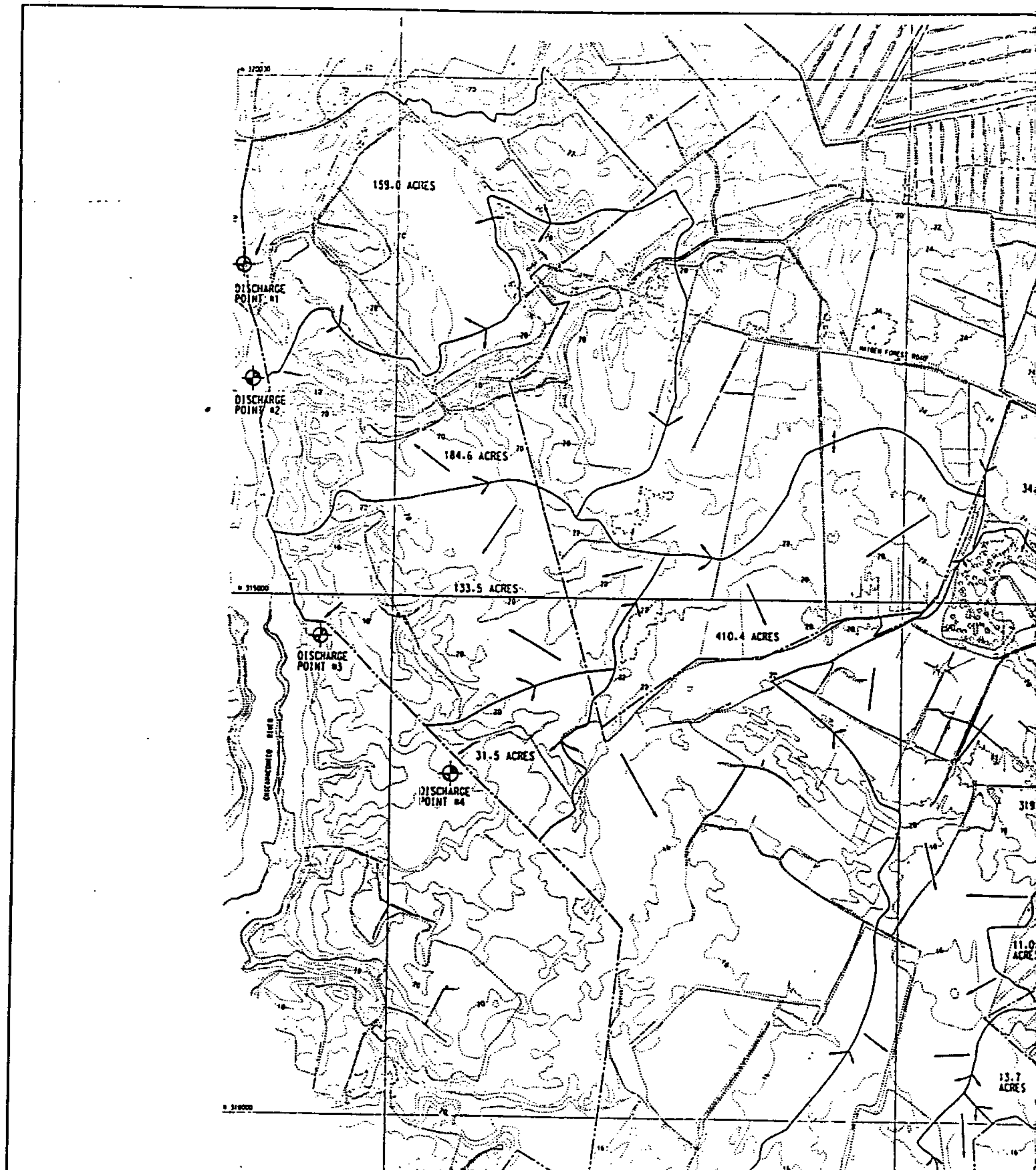
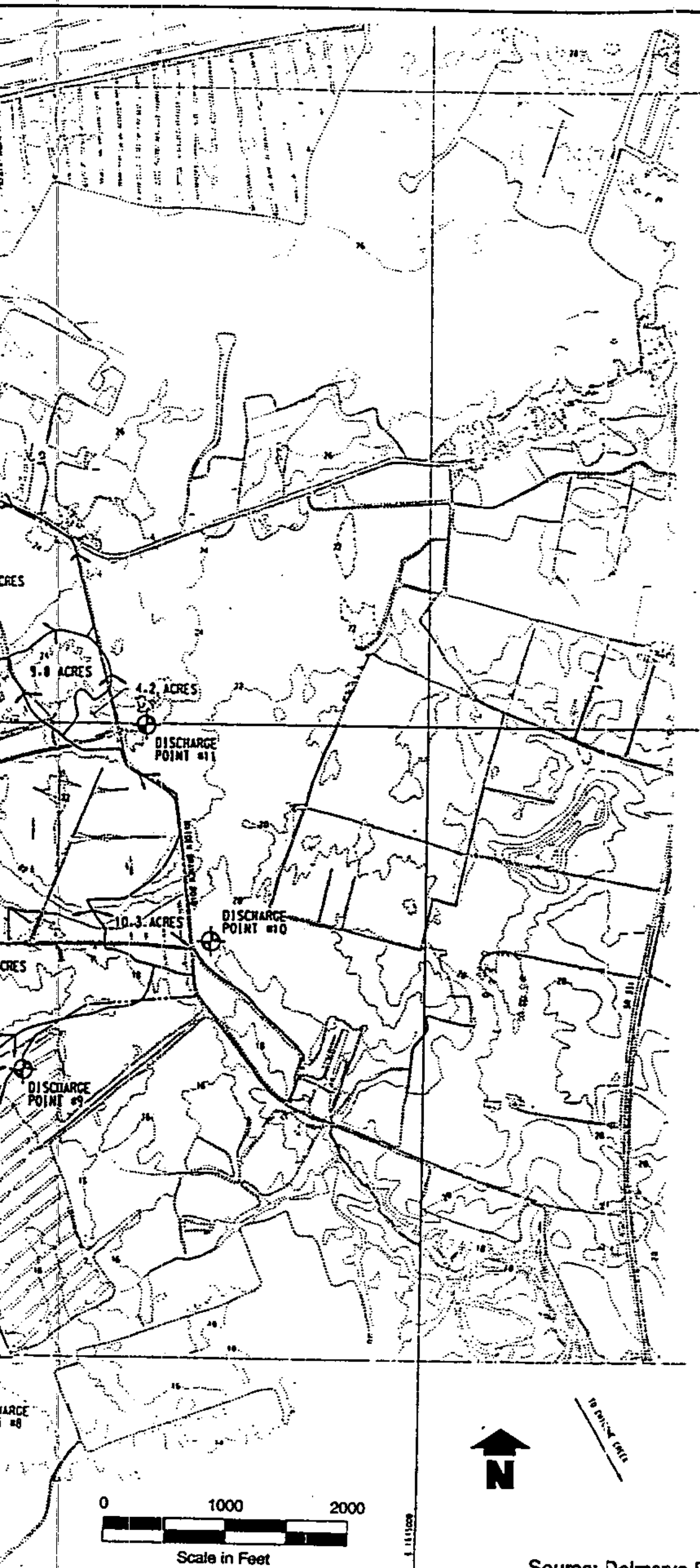
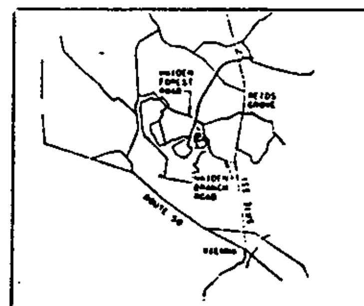




159.0 ACRES
DISCHARGE POINT #1
DISCHARGE POINT #2
184.6 ACRES
133.5 ACRES
DISCHARGE POINT #3
410.4 ACRES
31.5 ACRES
DISCHARGE POINT #4
11.0 ACRES
13.7 ACRES
17.4 ACRES
DISCHARGE POINT #5
DISCHARGE POINT #6

Figure 2-4
Plant Site Pre-Development Drainage Areas and Discharge Points
Dorchester Site





LOCATION PLAN

NOTES

1. COORDINATES ARE BASED ON MARYLAND STATE GRID SYSTEM (1983).
2. DISCHARGE POINTS #1 THROUGH #8 FLOW INTO CHICAMACOMICO RIVER, AND DISCHARGE POINTS #9 THROUGH #11, FLOW INTO CHICONE CREEK.
3. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM [illegible].
4. THE ACREAGES REFLECTED ON THIS DRAWING ARE AREAS ASSOCIATED WITH HYDROLOGICAL BOUNDARIES. DUE TO THE SIZE OF THE TRIBUTARY AREAS, SOME OF THE DRAINAGE DIVIDES HAVE BEEN TERMINATED AT THE PROPERTY BOUNDARY.
5. THE HYDROLOGICAL DRAINAGE AREAS ASSOCIATED WITH DISCHARGE POINTS [illegible] WILL NOT BE AFFECTED BY THE PROPOSED DEVELOPMENTS.

LEGEND

PROPERTY LINES

DRAINAGE DIVIDES

EXISTING CONTOURS

Source: Delmarva Power, Phase II CPCN Application, 1993 (Figure 3.8.2-6).

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Point 10 to Chicone Creek (Nanticoke River Basin); Delmarva Power has based its stormwater management plan for this area on the original ditch grading which drained to the Chicamacomico River through Discharge Point 6. The Dorchester County Highway Department and the Soil Conservation Service both accept this design parameter and prefer that the drainage patterns be returned to their original paths (Weber 1994, and Skinner 1994, personal communication). It is not known when the flow patterns were changed.

Runoff from the power block area will be routed to its original historic destination, Discharge Point 6, by dredging existing ditches that have filled in over time and constructing an earth berm in the middle of a currently maintained ditch. Flow to Discharge Point 6 will be carried in the existing ditches and should have little impact on the wetlands next to these ditches in Drainage Areas 7, 8, and 9. Section 4.4 discusses the wetlands impact in greater.

Observations made during PPRP's site visits during various times of the year indicate that the volume of surface water on the site fluctuates. During wet periods water in the drainage ditches is 2 to 4 feet deep and portions of the agricultural fields may have up to 1 foot of ponded water. During low precipitation periods the ditches and fields are completely dry.

2.2.5.2 *Post-Development Site Conditions*

Dorchester Unit 1 will develop approximately 29 percent of the 1,130-acre site. Construction of the plant's facilities and changes in the land's drainage characteristics will most affect the land draining through Discharge Points 3, 5, and 6, as summarized below.

- The power block area will impact 140 acres, or 36 percent of the total land draining through Discharge Point 6. The northern portion of the power block, 27 acres, does not drain to a specific discharge point, and therefore is not considered part of the land draining to Discharge Point 6 (Delmarva Power, Phase II CPCN application, 1993, pg 2.1.2-1 and Figure 3.8.2-6).
- Waste Disposal Area 1 will impact 110 acres, or 27 percent of the total land draining through Discharge Point 5 (Delmarva Power, Phase II CPCN application, 1993, pg 2.1.2-1 and Figure 3.8.2-6).
- Future construction of Waste Disposal Area 2, in conjunction with a second generating unit, would impact 80 acres, or 60 percent of the total land draining through Discharge Point 3 (Delmarva Power, Phase II CPCN application, 1993, pg 2.1.2-1 and Figure 3.8.2-6).

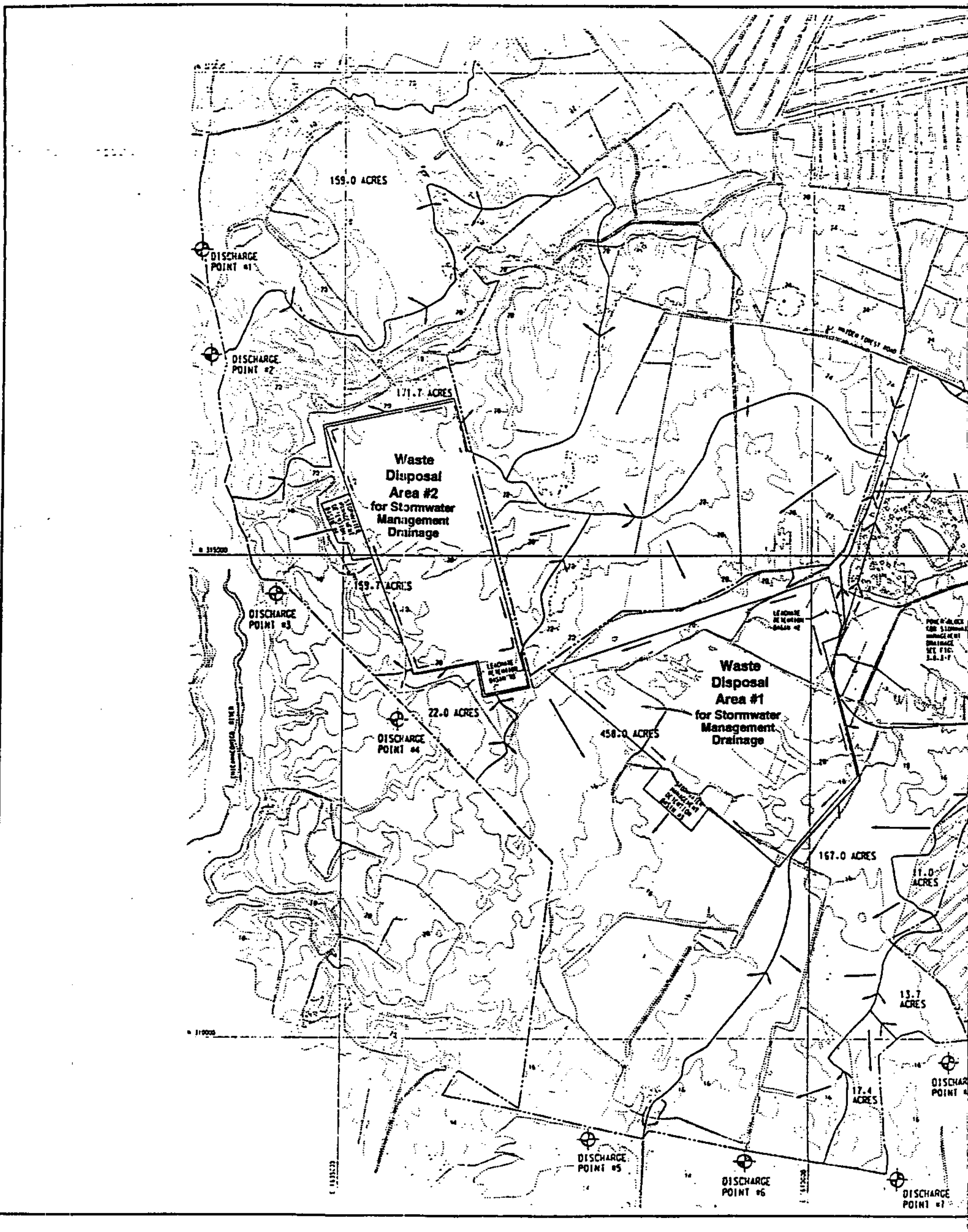
Runoff from the developed areas will be collected and recycled or released at a controlled rate through a detention basin in order to minimize the impacts of development. Figure 2-5 shows the new drainage boundaries resulting from the proposed development. The post-development weighted CN for the plant site is 82.8 (Delmarva Power, Phase II CPCN application, 1993, Table 3.8.3-1).

The evaluation of stormwater impacts from the proposed facility is based on the historic flow patterns for Discharge Points 6 and 10, not the current flow patterns which reflect changes to the historic flow patterns from ditch dredging. Since Delmarva Power has proposed restoring the historic drainage patterns, the flow currently discharged through Discharge Point 10 will be reduced as runoff from approximately 80 acres is routed to Discharge Point 6. Runoff through Discharge Point 10 is conveyed in man-made ditches to Chicone Creek.

As mitigation for potential stormwater impacts, Delmarva Power proposes to use four detention basins to regulate outflow from each of the impacted drainage areas. Delmarva Power designed the basins to maintain pre-development peak discharges and total runoff volume resulting from the developed areas. Two basins will service the power block, each having a principal spillway that will discharge to existing drainage ditches. The water will then flow by gravity through the existing ditches and wetlands to Discharge Point 6 (see Figure 2-6). PPRP has verified that the basins are appropriately sized to comply with regulatory specifications.

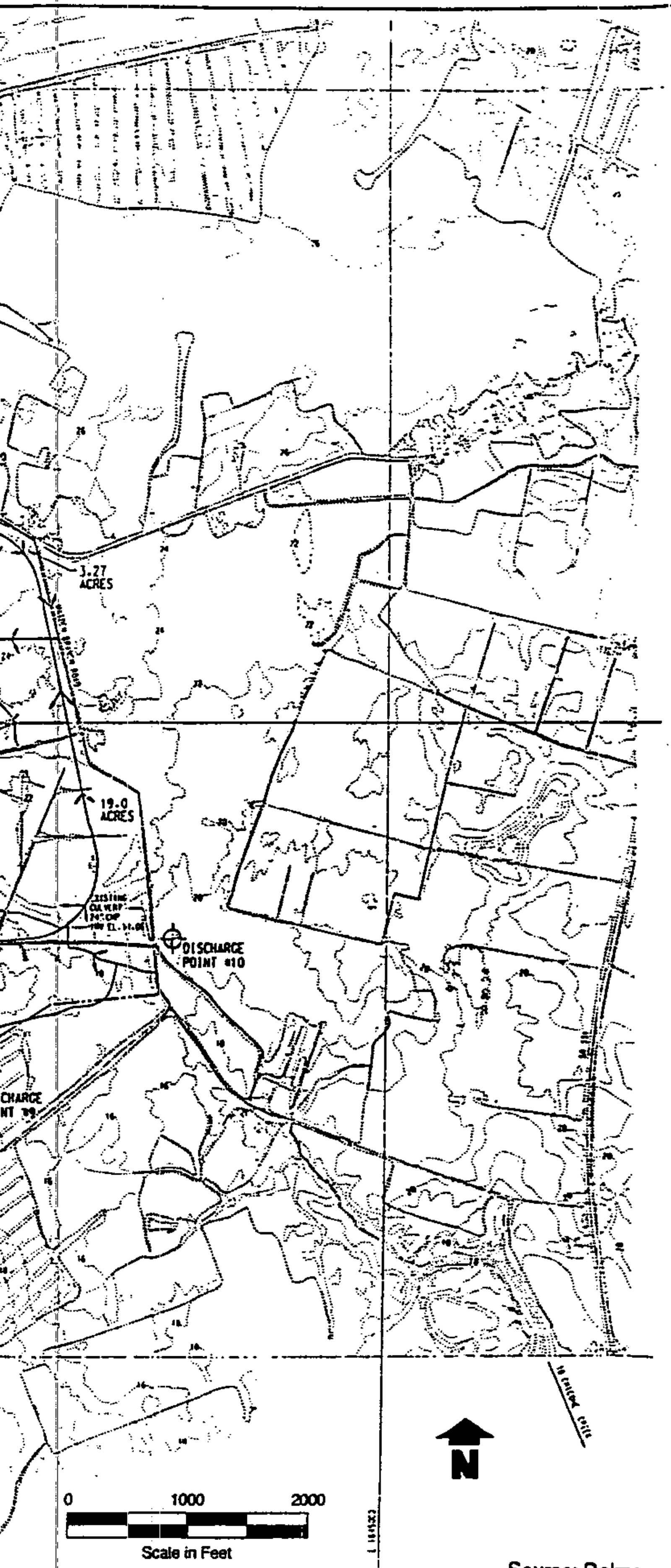
Each Waste Disposal Area will have one detention basin that will collect uncontaminated runoff from capped areas. Runoff from open cells within the disposal areas will be segregated from this uncontaminated runoff; it will be directed to a retention basin for recycling in the plant's wastewater treatment system. The principal spillway for the detention basin in Drainage Area 3 discharges to a small tributary of the Chicamacomico River. The principal spillway for the detention basin in Drainage Area 5 discharges to open land. The runoff will flow south until it is intercepted by a drainage ditch that flows towards Big Mill Pond, on the Chicamacomico River.

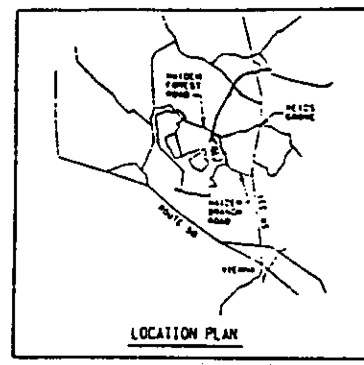
In summary, although there may be some small changes in the site's drainage paths associated with the facility, the overall peak discharge, volume of runoff, and receiving bodies of water will not change between pre- and post-development conditions. Stormwater from the undeveloped portion of the site will be essentially unchanged from pre-development conditions.



159.0 ACRES
DISCHARGE POINT #1
DISCHARGE POINT #2
171.7 ACRES
Waste Disposal Area #2 for Stormwater Management Drainage
159.7 ACRES
DISCHARGE POINT #3
22.0 ACRES
DISCHARGE POINT #4
Waste Disposal Area #1 for Stormwater Management Drainage
458.0 ACRES
167.0 ACRES
11.0 ACRES
13.7 ACRES
17.4 ACRES
DISCHARGE POINT #5
DISCHARGE POINT #6
DISCHARGE POINT #7

Figure 2-5
Plant Site Post-Development Drainage Areas and Discharge Points
Dorchester Site





LOCATION PLAN

NOTES

4.2 Combustion By-Product Area 1

4.3 Combustion By-Product Area 2

REFERENCE DRAWINGS

LEGEND

Source: Delmarva Power, Phase II CPCN Application, 1993 (Figure 3.8.3-1).

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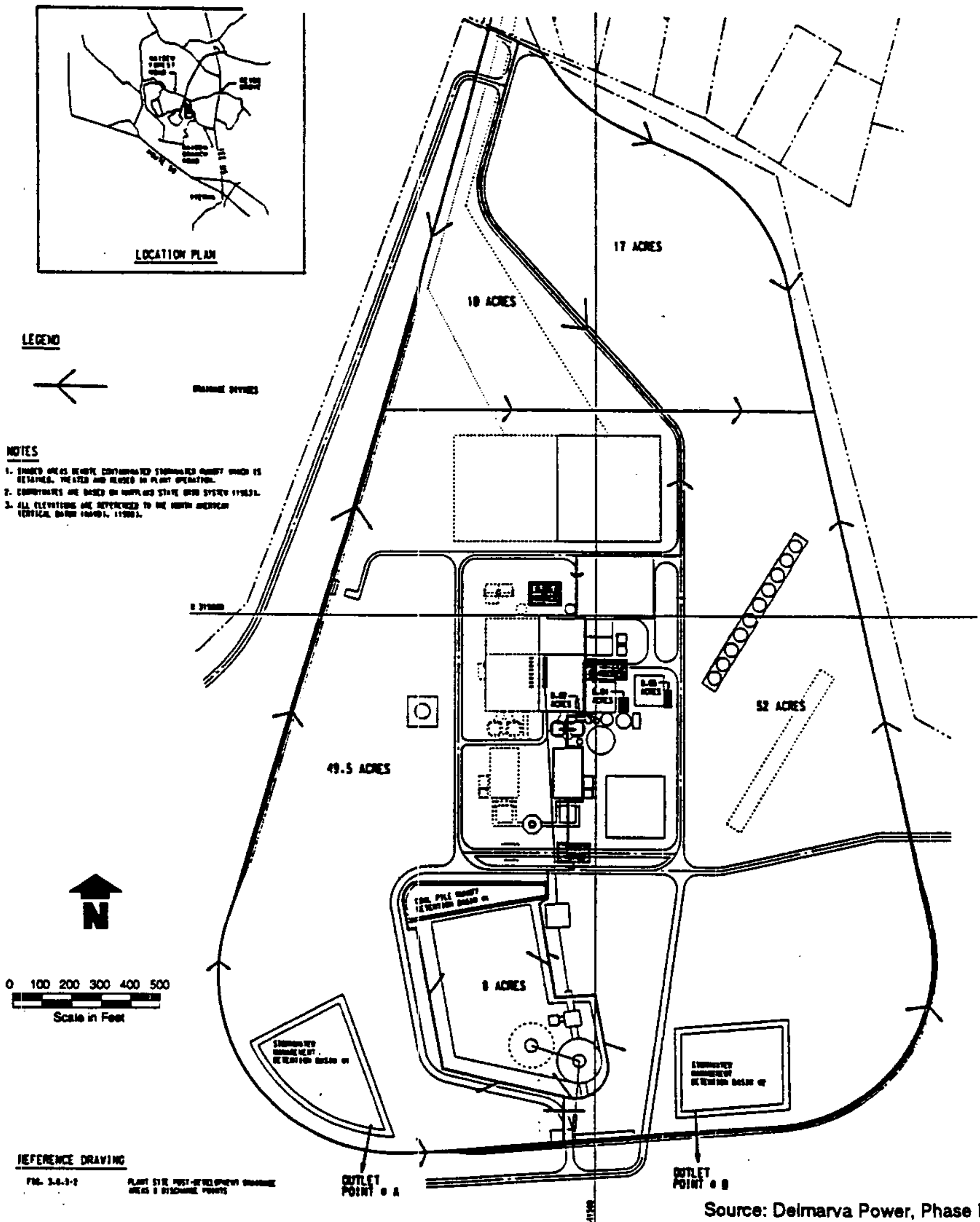
Figure 2-6
Power Block Post-Development Drainage Delineation of Stormwater Runoff
Dorchester Site



Source: Delmarva Power, Phase II CPCN Application, 1993 (Figure 3.8.3-7).

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2.2.5.3 *Railroad/Transmission Line Corridor*

The railroad / transmission line corridor will impact approximately 372 acres draining to Chicone Creek (Nanticoke River Basin), and 266 acres draining to the Chicamacomico River (Delmarva Power, Phase II CPCN application, 1993, pg 3.8.2-2). Because disturbance to the area draining to Chicone Creek will be minor, stormwater impacts should be minimal.

The Chicamacomico River drainage area will be impacted by modifications and/or replacement of ditches along the railroad spur. Currently, the 266 acres draining to the Chicamacomico River can be broken into six drainage areas (see Figure 2-7). This area, like the plant site, is a combination of farmland, wetlands, and forests. Once developed, the land's topography will be modified by the railroad bed and adjacent ditches so that the area will drain through just four Discharge Points (No. 7, 8, 9, and 11). Runoff that would normally pass through Discharge Point 6 will be carried along the railroad to Discharge Point 7. Runoff from Discharge Point 10 will be carried and combined with Discharge Point 9 (Delmarva Power, Phase II CPCN application, 1993, Figures 3.8.2-7 and 3.8.3-8). Since the runoff will still be directed to the same receiving water, impacts from these changes should be minimal.

In summary, the post-development runoff volumes derived from the railway / transmission corridor will be unchanged from predevelopment conditions. Pre- and post-development weighted CNs for the railroad / transmission line corridor are both 77.1 (Delmarva Power, Phase II CPCN application, 1993, Tables 3.8.2-2 and 3.8.3-3).

2.2.5.4 *Coal Barge Unloading Facility*

Approximately 3.2 acres in the southeast corner of Delmarva Power's existing Vienna power plant will have its drainage characteristics modified due to the proposed coal barge unloading facility. Since this area is partially paved with gravel there should be little change in either the peak discharge or total runoff from the area resulting from the proposed action. The post-development number of discharge points will be reduced, but the total flow into the Nanticoke River will remain the same. The pre- and post-development weighted CNs for this area are 87.5 and 89.8, respectively (Delmarva Power, Phase II CPCN application, 1993, Tables 3.8.2-3 and 3.8.3-4).

2.2.6 *Combustion By-Products Disposal Areas*

Delmarva Power has identified two on-site combustion by-products disposal areas (labeled as Waste Disposal Areas on Figure 2-2 and subsequent figures), which currently consist of cropland and mixed forests

(Figure 2-8) (Delmarva Power Phase II CPCN application, 1993, Figure 2.2.2-1). Waste Disposal Area 1 has a 110-acre footprint and nine cells; it will be located southwest of the power block and outside the coal train rail loop (Delmarva Power, Phase II CPCN application, 1993, pg 3.7.1-2, 3.2.0-2). Waste Disposal Area 2 will be developed only if a second generating unit is built at the site; it will cover approximately 80 acres in the northwestern portion of the site and contain ten cells (Delmarva Power, Phase II CPCN application, 1993, pg 3.7.1-2 - 3.7.1-3).

Each waste disposal area will have a liner and a leachate collection and removal system to prevent migration of contaminants from the disposal. During cell construction, stormwater runoff from the surfaces of the cell will be conveyed in ditches to a temporary detention basin, pumped to a permanent detention basin, and finally pumped to the wastewater treatment facility. After cell completion, the cell surfaces will be capped and sodded and the stormwater will be directed to a detention basin for controlled release off site. Leachate from the waste disposal area will be confined, collected, and directed to a retention basin for temporary storage before being pumped to the wastewater treatment facility for processing and reuse by plant systems (Delmarva Power, Phase II CPCN application, 1993, pgs 3.7.1-1 - 3.7.1-5).

Section 2.3.1.2 presents additional design information for the waste disposal areas.

2.2.7 *Linear Facilities*

Linear facilities associated with the proposed plant include a transmission line; rail spur; access roads; and cooling water intake, cooling tower blowdown (discharge), potable water, and sanitary sewer pipelines.

2.2.7.1 *Transmission Line*

A new 2.5 mile-long, double circuit, 138 kV transmission line will transmit electric power from the Dorchester plant to Delmarva Power's existing 138 kV Vienna-Steele transmission line (Delmarva Power, Phase II CPCN application, 1993, pg 2.1.3-1, 6.1.3-1). The Vienna-Steele line parallels SR 331 and extends from Delmarva Power's existing Vienna 8 power plant to its Steele substation in Denton, Maryland. According to Delmarva Power, tying the Dorchester Unit 1 transmission line into the Vienna-Steele transmission line at the proposed location would balance load and generation, and effectively reduce the level of power transfers that must be handled by the transmission system. The new line will be built for 230 kV but will operate at 138 kV until a future second unit is built on the Dorchester site. Should a second unit be added at the Dorchester site, the 138 kV line from Dorchester Unit 1 would be converted to 230 kV

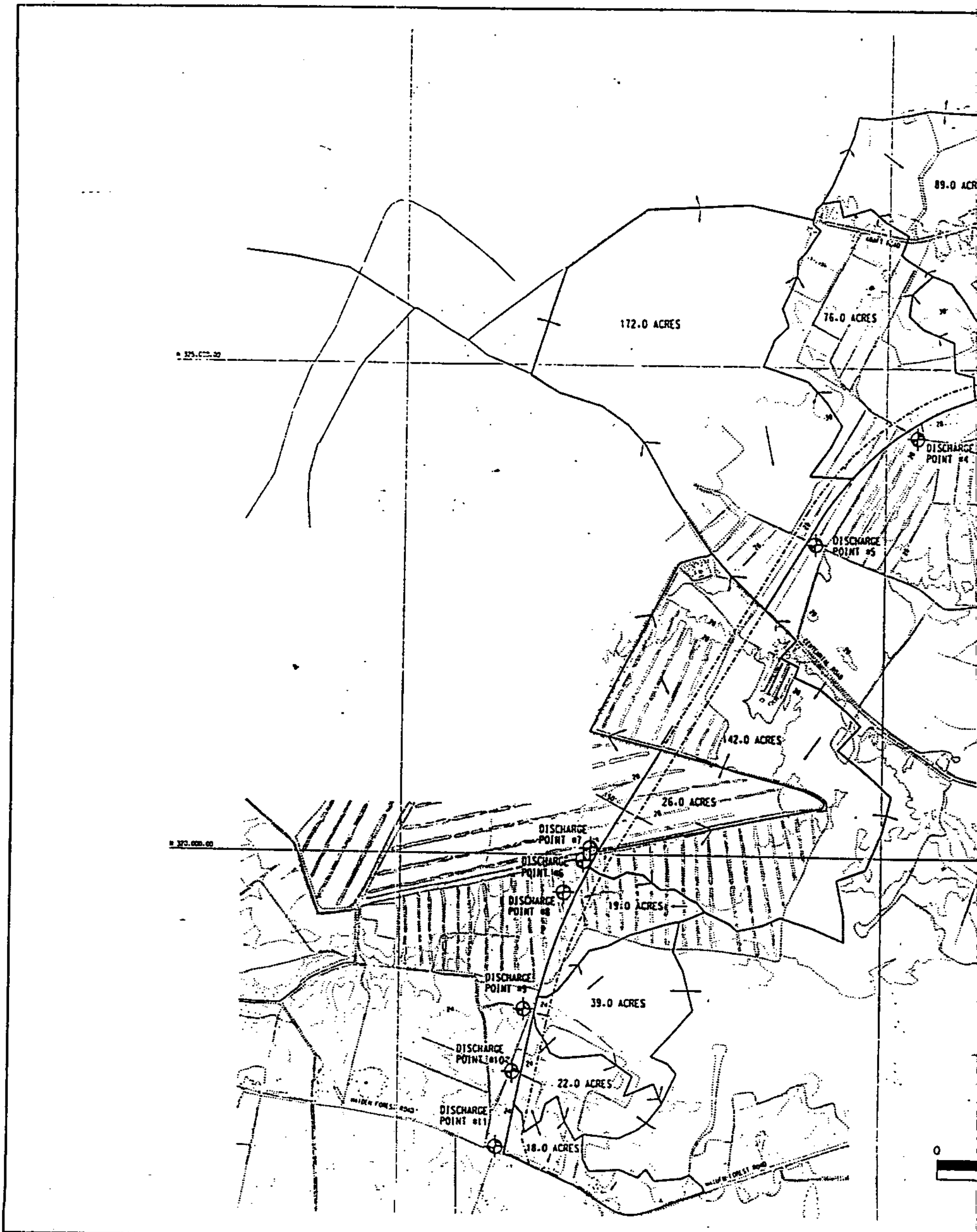
89.0 ACR
76.0 ACRES
172.0 ACRES
DISCHARGE POINT #4
DISCHARGE POINT #5
CENTENNIAL ROAD
142.0 ACRES
26.0 ACRES
DISCHARGE POINT #7
DISCHARGE POINT #6
DISCHARGE POINT #8
19.0 ACRES
DISCHARGE POINT #9
39.0 ACRES
DISCHARGE POINT #10
22.0 ACRES
DISCHARGE POINT #11
18.0 ACRES
0

Figure 2-7
Rail Spur/Transmission Line Corridor Pre-Development Drainage Areas and Discharge Points
Dorchester Site

Source: Delmarva Power, Phase II CPCN Application, 1993 (Figure 3.8.2-7).

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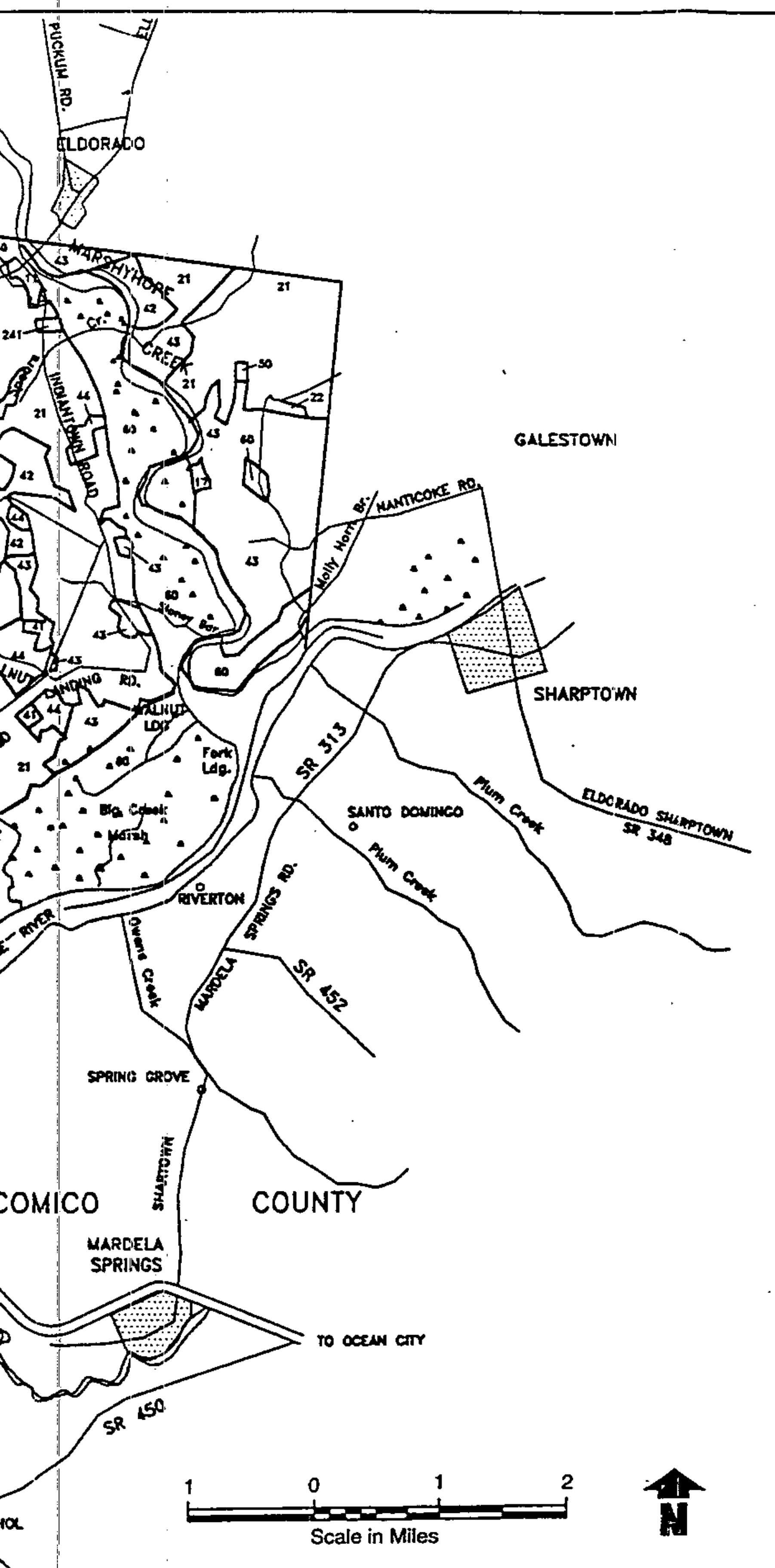
Figure 2-8
Land Use/Land Cover Classification Map
Dorchester Site



LAND USE/LAND COVER CLASSIFICATION MAP

LEGEND

10 – URBAN BUILD-UP
11 – LOW DENSITY RESIDENTIAL (.2 – 2 DU /ACRE)
12 – MEDIUM DENSITY RESIDENTIAL (<2–8 DU /ACRE
13 – HIGH DENSITY RESIDENTIAL (>8 DU /ACRE)
14 – COMMERCIAL
15 – INDUSTRIAL
16 – INSTITUTIONAL
17 – EXTRACTIVE
18 – OPEN URBAN LAND
191 – LARGE LOT SUBDIVISION (AGRICULTURE)
192 – LARGE SUBDIVISION (FOREST)
20 – AGRICULTURE
21 – CROPLAND
22 – PASTURE
23 – ORCHARDS
241 – FEEDING OPERATIONS
242 – AGRICULTURAL FACILITIES
25 – ROW AND GARDEN CROPS
40 – FOREST
41 – DECIDUOUS FOREST
42 – EVERGREEN FOREST
43 – MIXED FOREST
44 – BRUSH
50 – WATER
60 – WETLANDS
70 – BARREN LAND
71 – BEACHES
72 – BARE EXPOSED ROCK
73 – BARE GROUND

Source: Maryland Office of Planning, 1990.

Source: Delmarva Power phase II CPCN application, 1993, (figure 2.2.2-1).

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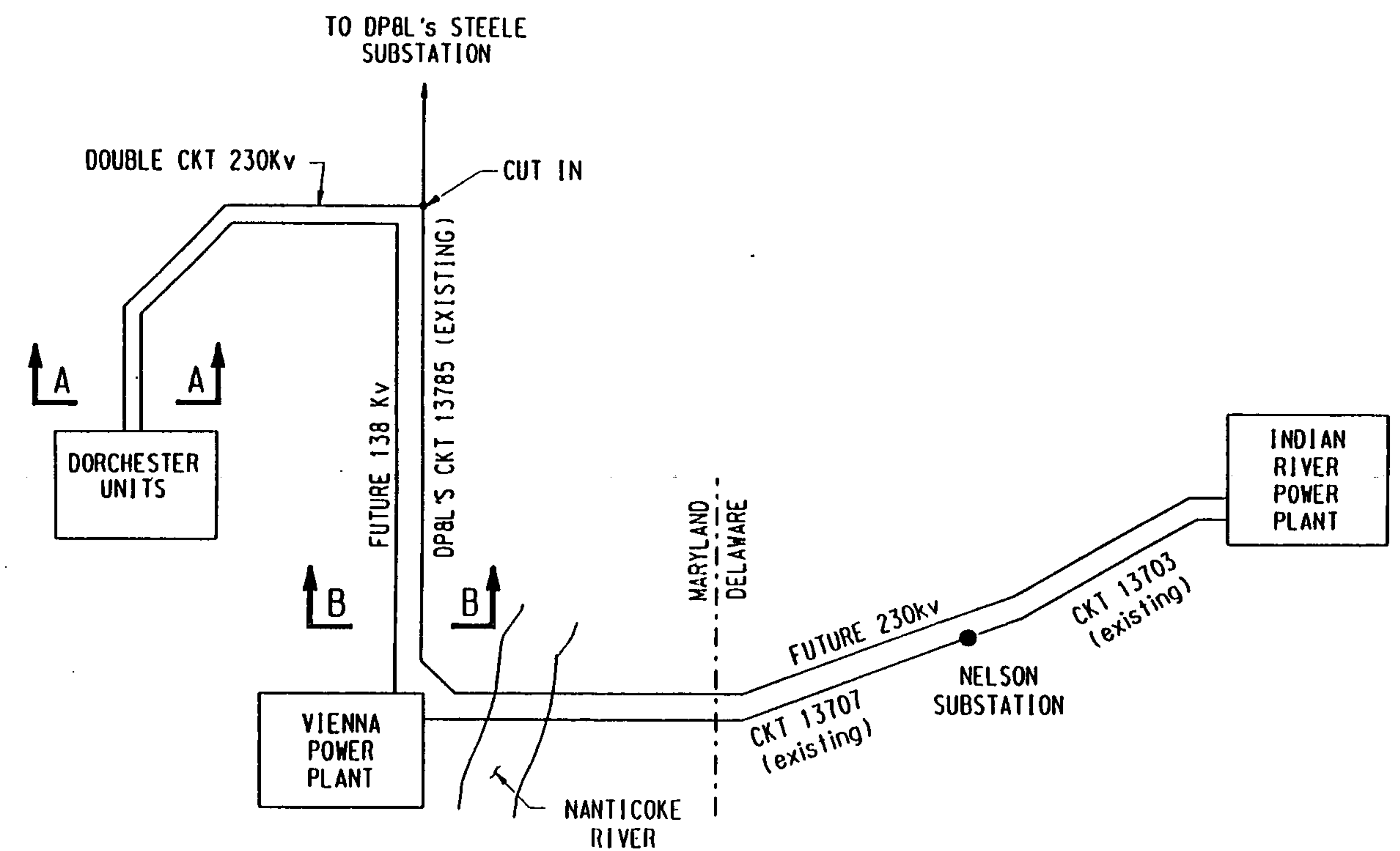
operation and a second 230 kV line would be built from the second unit to Delmarva Power's Indian River power plant along the existing right-of-way (ROW) (Figures 2-9 and 2-10). The width of the existing ROW to Indian River would be increased by 25 feet (Delmarva Power, Phase II CPCN application, 1993, pg 6.1.1-1).

The 230 kV double circuit line will use 1590 aluminum core steel reinforced (ACSR) conductor and the 138 kV circuit will use 954 ACSR conductor. The typical span length will be 450 feet. Delmarva Power has proposed using steel and/or concrete poles (Figure 2-11). Typical pole diameters would range from 10 inches at the top to approximately 30 inches at the ground; typical pole heights would range from 75 to 80 feet above ground. Both direct embedding and concrete foundations have been proposed for the poles, with the holes extending approximately 15 feet below ground level for a diameter of 3 feet (Delmarva Power, Phase II CPCN application, 1993, pg 6.1.3-1).

Upon exiting the Dorchester site, the new transmission line will be collocated with a new rail spur within a 150-foot-wide ROW (100-foot-wide transmission line corridor, 50-foot-wide rail corridor) for 2.1 miles. Once the rail corridor diverges, the transmission line will travel within a 100-foot-wide corridor for 0.4 miles until intersecting with the Vienna-Steele transmission line (Delmarva Power, Phase II CPCN application, 1993, pg 2.1.3-1). As illustrated in Figure 2-12, the combined transmission/rail corridor will begin at the northern boundary of the Dorchester site and cross Maiden Forest Road. The corridor will continue north-northeast to Centennial Road, primarily across lands in planted pine production. The corridor will cross Centennial Road approximately 0.9 miles west of SR 331 and will continue in a northeasterly direction across croplands to SR 331. After crossing SR 331, the transmission line corridor will separate from the railroad corridor and will continue due east across the upper reaches of Chicone Creek and Jones Thickett Road for 0.4 miles to reach the existing Vienna-Steele transmission line (Delmarva Power, Phase II CPCN application, 1993, pg 6.1.2-1).

The 100-foot-wide transmission corridor comprises approximately 27.8 acres of agricultural and silvicultural lands which include only limited areas of natural habitat (Delmarva Power, Phase II CPCN application, 1993, pg 6.1.6-1). Croplands comprise 13.4 acres and currently provide the primary cover within the proposed corridor between Centennial Road and SR 331. Lands converted to planted pine production cover 8.2 acres and represent the principal land use for the proposed corridor area between Maiden Forest Road and Centennial Road. Some of the planted pine acreage (6.7 acres) also represents jurisdictional wetlands. Deciduous hardwood-pine communities (5.1 acres) north of Maiden Forest Road, a small tract of palustrine forest (1.1 acres), and roads and ROWs constitute

Figure 2-9
Proposed Ultimate Dorchester Unit 1 Transmission Project
Dorchester Site



No Scale.

Source: Delmarva Power Phase II CPCN Application, 1993 (Figure 6.1.3-1, sheet 1 of 2).

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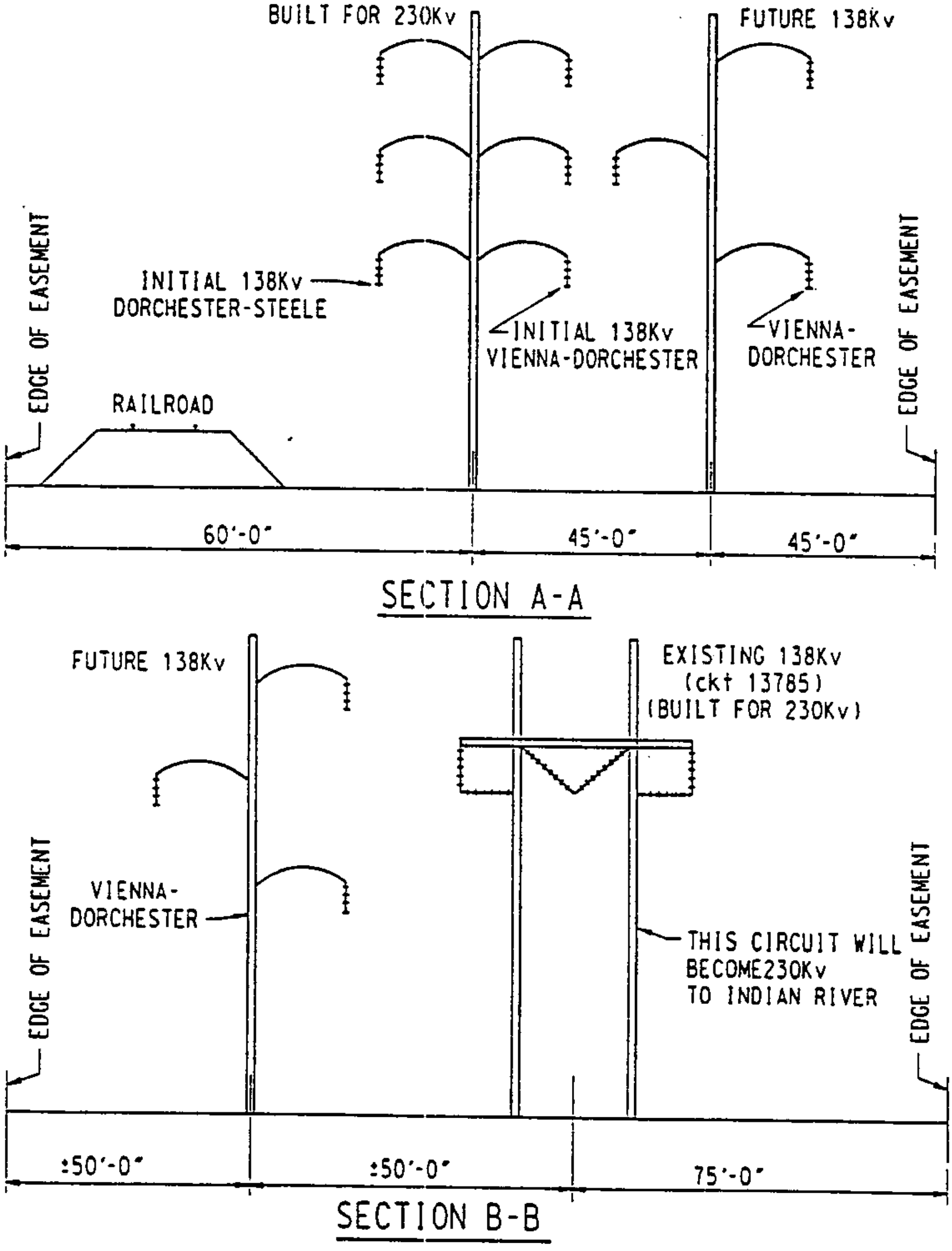
Figure 2-10
Proposed Transmission Line Right-of-Way Configuration
Dorchester Site



No Scale.

Source: Delmarva Power Phase II CPCN Application, 1993 (Figure 6.1.3-1, sheet 2 of 2).

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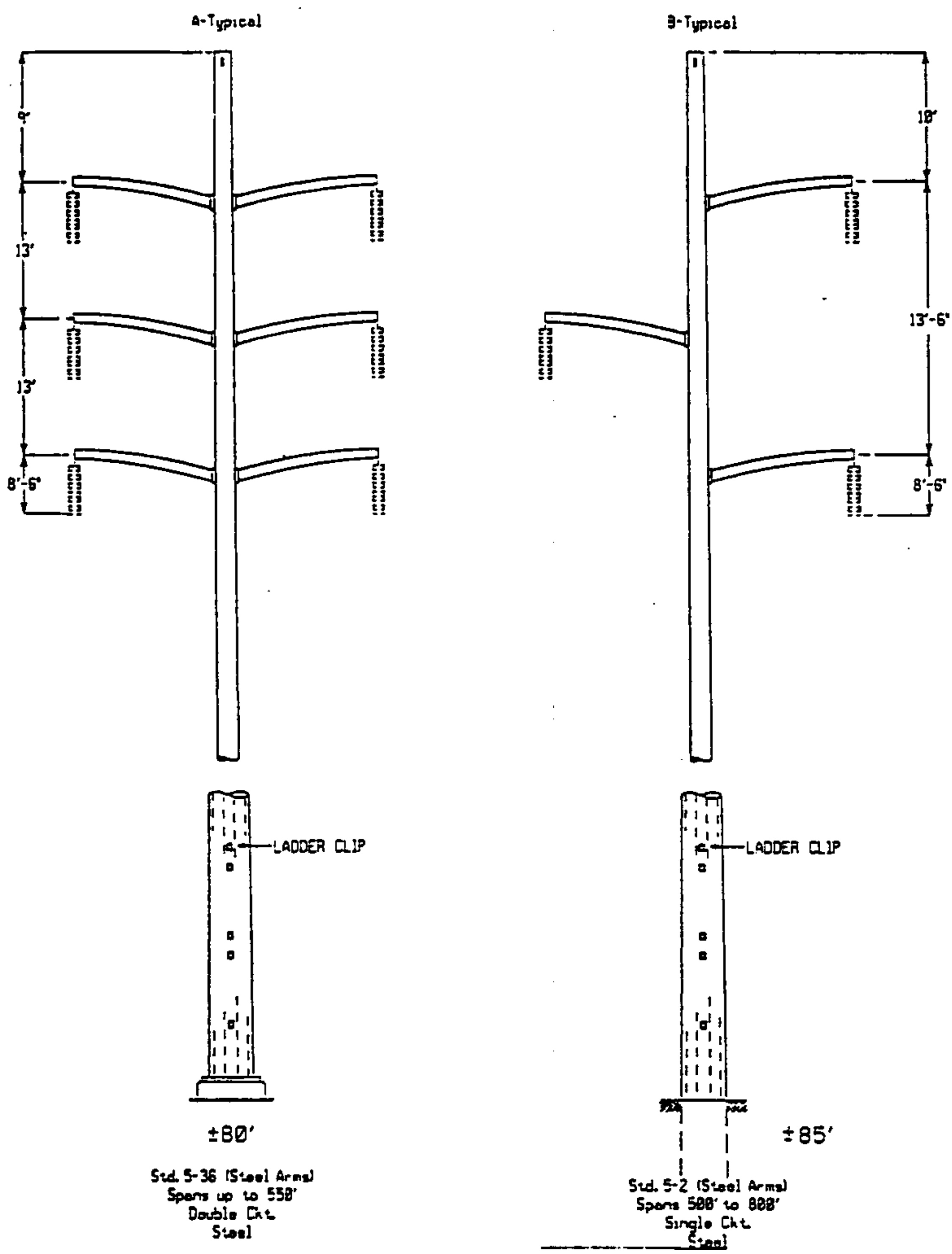
Figure 2-11
Proposed Dorchester Unit 1 Transmission Poles
Dorchester Site



No Scale.

Source: Delmarva Power, 1993 (Figure 6.1.3-2).

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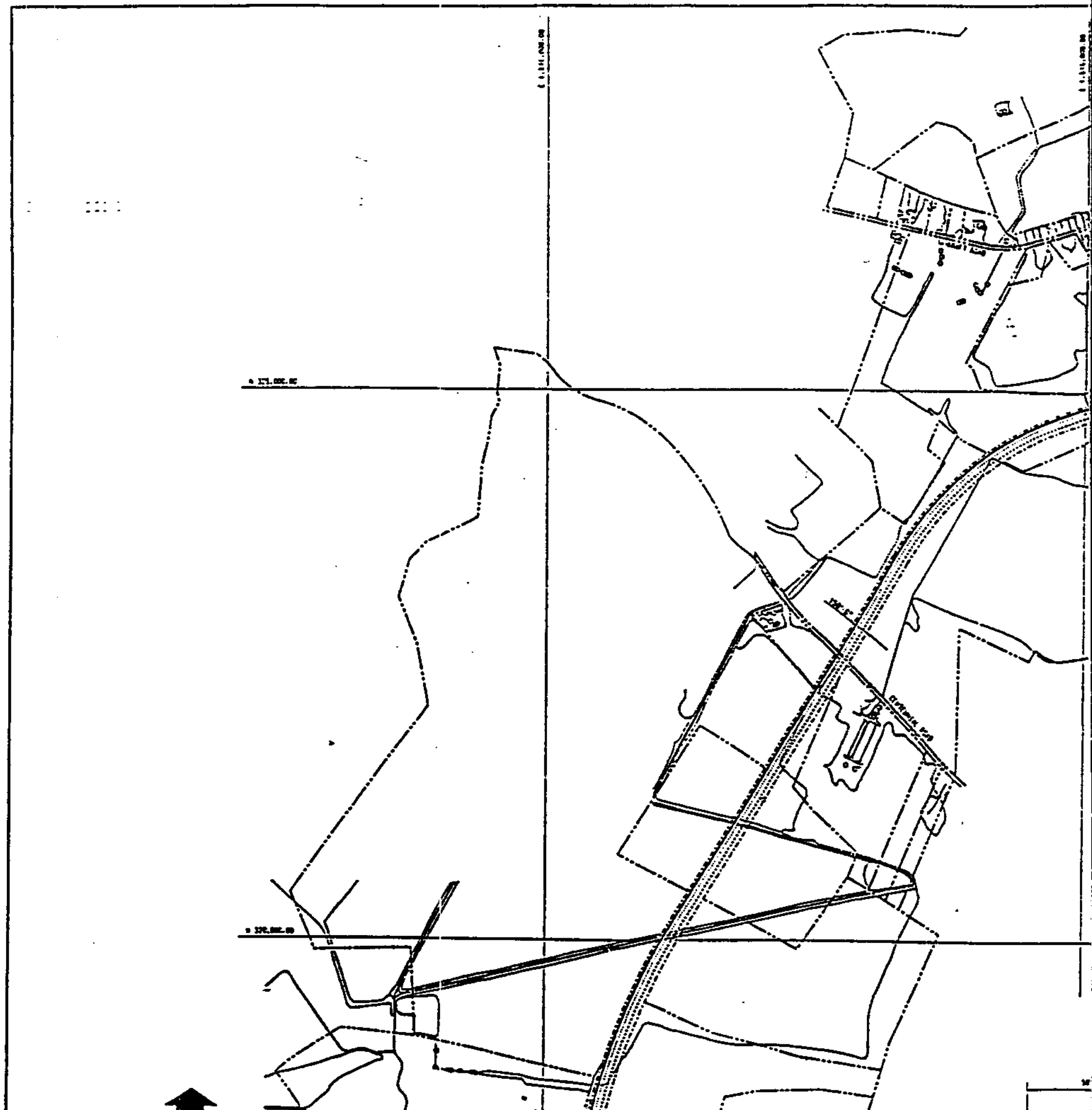
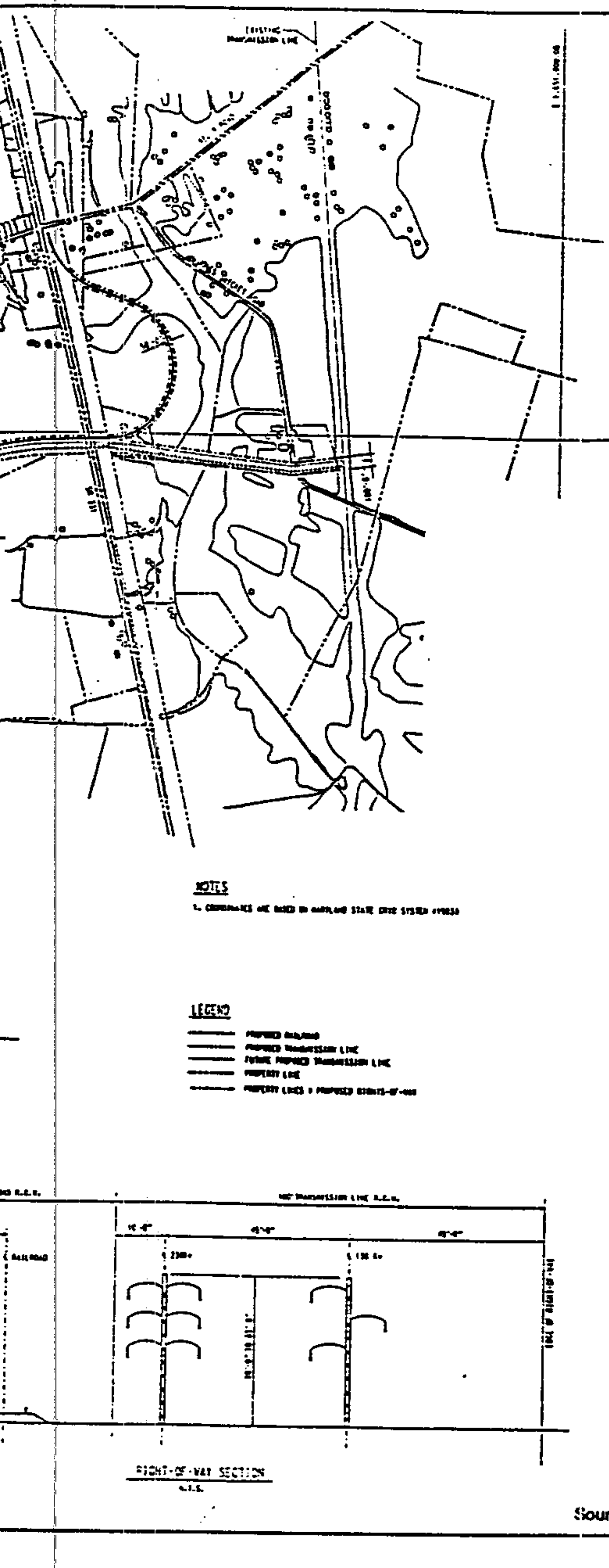
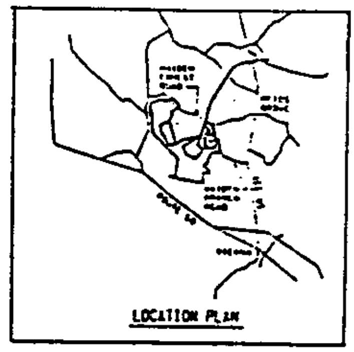

N
0
1000
2000
Scale in Feet

Figure 2-12
Proposed Dorchester Unit 1 Rail Spur/ Transmission Line Corridor
Dorchester Site





Source: Delmarva Power Phase II CPCN Application, 1993 (Figure 6.1.2-1).